

**Evaluative Report of the Department
of
Molecular biology and Biotechnology
(Under Graduate)**

Name of the department	Molecular Biology and Biotechnology
Year of Establishment	1984 (UG General) 2004 (UG Honours)

Department Activities (500 words)-2018-2023

Department of Molecular Biology and Biotechnology

The Department of Molecular Biology and Biotechnology of Sripat Singh College is the sole department in Murshidabad district training students in the aforementioned subject. The teaching of Molecular Biology at the Intermediate level started in this college in the year 1982. The honours course in Molecular Biology and Biotechnology was introduced in the year 2004. At present the department offers 3-year UG honours course in Molecular Biology and Biotechnology, and 3-year UG programme course in Molecular Biology and Molecular Biology as a GE course. From the academic session 2018-19, the Department of Molecular Biology and Biotechnology has been offering the Semester system of evaluation at the UG level under the CBCS system. Presently, the aforesaid courses are under the affiliation of the University of Kalyani. The students from the previous four academic sessions have secured top ranks in the university and are placed in IIT, IISER, JNU, CU, JU, etc. Students are provided proper guidance for higher studies and jobs related to the subject.

Departmental Activities (2018-2023)

- At present the department has a common laboratory for both Honours and General students and a research laboratory for pursuing the research work.
- Regular interaction with the ex-students of the Department who have made a mark in their life in National as well as in international arena.
- Regular assessment of students is done through class tests, evaluation and parent teacher meetings along with smart class room teaching.
- Special lecture session, webinar and seminar.
- Students' seminar and group discussion
- Project works under due guidance.
- Participation in active research with our faculty members.

- Laboratory demonstration,
- Access to the central library with rich collection of text books as well as reference books.
- Following University curriculum, the department arranges Lab visits/ excursions for the students of honours course every year.

FACILITIES AVAILABLE TO THE STUDENTS

- ICT classroom.
- Boost sponsored laboratory aided by WBDBT grant.
- Departmental E-Library upgraded every 3 months.
- Educational excursion to Research Institutes.
- Project work and Journal publication.
- Participation in Science fairs, International webinars, Student seminars and group discussions.
- Active research work with faculties in ongoing research projects.

Names of Programmes/Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)	UG		
Names of Interdisciplinary courses and the departments/units involved			
Annual/semester/choice-based credits system (programmewise)	Semester Wise System 1 st & 2 nd Sem: NEP (Major & Minor) 3 rd to 6 th Sem: CBCS (Honours & Programme)		
Participation of the department in the courses offered by other departments	<ul style="list-style-type: none"> • Add on course in Botany-Tissue Culture • Add on course in Botany-Musroom Culture 		
Courses in collaboration with other universities, industries, foreign institutions, etc.	<ul style="list-style-type: none"> • Add on course in VIB-Musroom Culture 		
Details of courses/programmes discontinued (if any) with reasons	NA		
9. Number of Teaching posts		Sanctioned	Filled
	Professors		
	Associate Professors	1 Associate GLI	1
	Assistant Professors	3	2
	SACT (Temporary)	2	2

10. Faculty Profile						
Name	Qualification	Designation	Specialization	No. of Years of Experience		No. of Ph.D. Students guided for the last 5 years
				Teaching	Research	
A. Permanent Faculty						
Dr. Abhishek Basu	Ph.D.	Assistant Professor	Molecular Biology and Biotechnology	6.5 yrs	15 yrs	1 (Pre-Ph.D. synopsis submitted)
Debjani Mandal	M.Sc.	Assistant Professor	Molecular Biology and Biotechnology	6.5 yrs	4 yrs	
Dr. Bibhas Bhattacharya	Ph.D.	Associate General Laboratory Instructor	Molecular Biology and Biotechnology	36.5 yrs	12 yrs	
B. SACT Faculty						
Sayantani Basu	M.Sc.	SACT-II	Molecular Biology and Biotechnology	14 yrs	5 yrs	
Manali Biswas	M.Sc.	SACT-II	Molecular Biology & Biotechnology		NA	

11. List of senior visiting faculty						
12. Percentage of lectures delivered and practical classes handled (programmewise) by temporary faculty	Academic Session	Programme	Total No. of lectures		% of Lectures	
			Theory	Practical	Theory	Practical
	2018-19	UG Honours			40%	20%

ity		UG General			80%	20%
	2019-20	UG Honours			40%	20%
		UG General			80%	20%
	2020-21	UG Honours			40%	20%
		UG General			80%	20%
	2021-22	UG Honours			40%	20%
		UG General			80%	20%
	2022-23	UG Honours			20%	20%
UG General				40%	20%	
13. Student-Teacher Ratio (programme wise)					Ratio	
	Academic Session	Programme				
	2018-19	UG General		12:1		
		UG Honours		7:1		
	2019-20	UG General		12:1		
		UG Honours		7:1		
	2020-21	UG General		12:1		
		UG Honours		7:1		
	2021-22	UG General		12:1		
		UG Honours		7:1		
2022-23	UG General		12:1			
	UG Honours		7:1			
14. Number of academic support staff (technical) and administrative staff; sanctioned and filled	Category of Staff	Sanctioned	Filled			
	Technical	01	01			
	Administrative	00	00			
15. Qualifications of teaching faculty with D.Sc./D.Litt/Ph.D./M.Phil/PG.	Qualifications	Number				
	D.Sc.					
	D.Litt					
	Ph.D.	2				
	M.Phil					
	PG	3				

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received	Ongoing	Proposed
	2	
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received	<p>1. Bioremediation and Design optimization, field implementation of a class of novel eco-friendly surface-modified metal oxides: Deployment as portable household filter for arsenic/fluoride infested water treatment. Grant Received: Rs. 3,25,000/- Funded by: Department of Science and Technology, Government of West Bengal</p> <p>2. Bioaccumulation of Arsenic by Arsenic Resistant Bacteria: A Technology to Mitigate Arsenic Toxicity in Soil, Groundwater and Waste-water. Grant Received: 4,05,000/- Funded by: Department of Science and Technology, Government of West Bengal</p> <p>Total Grant Received: Rs. 7,30,000/-</p>	
18. Research Centre /facility recognized by the University: National Recognition	NA	

19. Publication	A. Total No. of Publications of the Department (2018-23) = 14						
	Total No. of Faculty (2018-23) = 5						
	Publication per Faculty (2018-23) = 2.8						
		2018	2019	2020	2021	2022	Total
	Total year wise publication of the Dept.						
	No. of papers published in peer reviewed journals by faculty and students						
	No. of publications listed in International Database						
	Monographs						
	Chapter in Books						
	Books Edited						
	Books with ISBN/ISSN numbers with details of publishers						
	Citation Index						
	SNIP						
	SJR						
	Impact factor						
h-index							

Total year wise publication of the Department of Molecular Biology and Biotechnology:

SN	Year	Title	Authors	Journal/Book	Publisher	Page/DOI	ISBN/ISSN No.	Impact Factor	Cite Score
1	2019	Exploration of biochemical properties of soil and groundwater in arsenic affected blocks of Murshidabad district and isolation of potential arsenic resistant bacteria	S.Ahmed, A. Basu, D. Mandal, I. Saha, M. Biswas	Environmental Arsenic in a Changing World	Taylor and Francis Group	281-282.	eBook ISBN: 9781351046633		
2	2020	YspD: A Potential Therapeutic Target for Drug Design to Combat Yersinia enterocolitica Infection	Debjani Mandal, Debabrata Mandal & Abhishek Basu*	International Journal of Peptide Research and Therapeutics	Springer	26, p1765–1780; DOI: https://doi.org/10.1007/s10989-019-09968-3	ISSN: 1573-3149	2.5	2246
3	2020	A study of production of quality Banana planting Material for Micro Propagation	Bhattacharyya B, Tripathi N	Our Heritage Journal	-	-			
4	2020	Enhanced Propagation Methods to Increase Banana Production Productivity	Bhattacharyya B, Tripathi N	Our Heritage Journal	-	-			
5	2020	Environmental Effects and Management Strategies of the Herbicides	Sayantani Basu, Y. Vasudeva Rao	International Journal of Bio-resource and Stress Management	Puspa Publishing House	11(6):518-535; DOI: https://doi.org/10.23910/1.2020.2069d .			
6	2021	Isolation and identification of arsenic resistant bacteria: a tool for bioremediation of arsenic toxicity	D. Mandal; R. Sonar; I. Saha; S. Ahmed; Abhishek Basu*	Int. J. Environ. Sci. Technol.	Springer	19:9883 - 9900; DOI: https://doi.org/10.1007/s13762-021-03673-9		3.1	13670
7	2021	Role of Heavy-Metal Resistant Bacteria Isolated from Rhizosphere in Bioremediation and Plant Development	Debjani Mandal and Abhishek Basu*	Rhizobiology: Molecular Physiology of Plant Roots. Signalling and Communication in Plants	Springer	DOI: https://doi.org/10.1007/978-3-030-84985-6_22			

8	2022	Isolation and Identification of Arsenic Hyper-Tolerant Bacterium with Potential Plant Growth Promoting Properties from Soil	Debjani Mandal, Mina Aghababaei, Sadhan Kr Das, Santanu Majumder, Debashis Chatterjee, and Abhishek Basu*	Minerals	MDPI	12, no. 11: 1452; DOI: https://doi.org/10.3390/min12111452	ISSN: 2075-163X	2.5	
9	2022	Small Molecular Antimicrobial Ligands of YspD are Potential Therapeutic Agents Against Yersinia enterocolitica Infection	Debjani Mandal; Raktim Mukherjee; Shrabana Ghosh; Tamanna Bachhawat; Sneha Dutta; Urmisha Das; Abhishek Basu*	Proc. Natl. Acad. Sci., India, Sect. B Biol. Sci.	Springer	93(2):461-471; DOI: https://doi.org/10.1007/s40011-022-01443-2 .		1.74	
10	2022	ARSENIC TOXICITY AND ITS CLINICAL MANIFESTATIONS IN MURSHIDABAD DISTRICT WITH SOME POTENTIAL REMEDIAL MEASURES	Debjani Mandal, Sayan Biswas, Souradip Seal, Rudrajit Mandal, Sayan Das and Abhishek Basu*	Microbes and Microbial Biotechnology for Green Remediation	Elsevier	pp. 701–715; DOI: https://doi.org/10.1016/B978-0-323-90452-0.00011-6			
11	2023	Identification of microbiogeochemical factors responsible for arsenic release and mobilization, and isolation of heavy metal hyper-tolerant bacterium in irrigation well water: A case study in Rural Bengal	Sandipan Barman, Debjani Mandal, Pinaki Ghosh, Ayan Das, Madhurina Majumder, Debankur Chatterjee, Debashis Chatterjee*, Indranil Saha, Abhishek Basu*	Environ Dev Sustain	Springer	DOI: https://doi.org/10.1007/s10668-023-02914-w		4.9	

12	2023	Wastewater Treatment in India—A New Perspective	Debjani Mandal; Subhankar Mondal; Sayan Biswas; Souradip Seal; Sayan Das; Suparna Bagchi; Rudrajit Mandal; Sk. Fulchand; Atanu Mondal; Abhishek Basu*	Monitoring and Managing Multi-hazards. GIScience and Geo-environmental Modelling	Springer	277-292; DOI: https://doi.org/10.1007/978-3-031-15377-8	ISBN: 2730-7506.		
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20. Areas of consultancy and income generated					Nil
	Name of Faculty	National committees	International Committees	Editorial Boards	Other
	21. Faculty members in				
a) National committees	Dr. Abhishek Basu		Scientific and Technical Research Association (STRA): Eurasia (Membership ID: ERCICSTR2003081)	Reviewer in 'Informatics in Medicine Unlocked' (Elsevier Journal)	
b) International Committees			Member of 'European Geoscience Union'	Reviewer 'ESPR' (Springer Journal)	
c) Editorial Boards....	Ms. Debjani Mandal	-	-	-	-
	Dr. Bibhas Bhattacharyya	-	-	-	-
	Mrs. Manali Biswas	-	-	-	-
	Mrs. Sayantani Basu	-	Member of Indian institute of soil science (ISSS)	-	-

22. Student projects: percentage of students who have done in-house projects including inter departmental/ programme	Session	% of students who have done in-house projects including inter departmental/programme		% of students placed for projects in organizations outside the institution		
		Compulsory Environmental Studies	Other	Research Laboratories	Industry	Other agencies
	2018-19	100				
Percentage of students placed for projects in organizations	2019-20	100				
	2020-21	100				

outsidetheinstitution. e.inResearchlaborator ies/Industry/ otheragencies	2021-22	100				
	2022-23	100				

23. Awards/Recognitionsreceiv edbyfacultyandstudents	Session	Name	Awards/Recognitions
	2018-19		
	2020-21		
	2019-20		
	2022-23		
	2020-21		

24. Listofeminentacademiciansandscientists/visitorstothe department

SN.	Name of the Speakers	Designation	Year of Visit
1	Dr. Ankur Bikash Pradhan	Examiner of Patents & Designs, The Patent Office, Kolkata,	2021-22
2	Dr. Sagar Khan	DPIIT, Ministry of Commerce & Industry, Govt. of India	2021-22
3	Dr. Banalata Adhikari	MBBS, North Bengal Medical College	2021-22
4	Dr. Akash Banerjee	B.M.O.H, JiaganjRural Hospital	2021-22
5	Dr. Sanmitra Ghosh,	Department of Biological Sciences, Adamas University;	2021-22
6	Dr. Suchandrima Ghosh	I.P.G.M.E & R and S.S.K.M. Hospital	2021-22

25. Seminars/Conferences/ Workshopsorganized&thesourceoffunding

- a) National
- b) International
- c) State

- a) National:
- b) International:
- c) State:

SN.	Type of Seminar	Mode of Communication	Academic Year	Topic of Seminar
1	Online Seminar	Online	2021-22	Intellectual Property Rights Awareness

2	Seminar	Offline	2021-22	Blood: Transfusion – Transmitted and Public Health Response
3	State Level Webinar	Online	2021-22	Clinical Biotechnology
4	Seminar	Offline	2022-23	Celebrating 200 Years of “Father of Genetics”
5	International webinar	Online	2020-21	International webinar on Biochemistry and Structural Biology
6	International webinar	Online	2020-21	International webinar on Biotechnology

26. Student profile programme/course wise

Name of the Course/ programme	Applications received	Selected	Enrolled		Pass percentage
			Male	Female	
UG- 2018-19					100
UG- 2019-20					100
UG- 2020-21					100
UG- 2021-22					100
UG- 2022-23					100

27. Diversity of Students	Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
	UG Honours	100	-	-
	UG General	100	-	-
	PG	NA	NA	NA

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

SN	Batch	Name	National and State Competitive Examinations	Year of Passing
1	2016-2019	Ritesh Sonar	JAM	2019
		Bipra Prasad Dey	DBT-JRF	2021

			Joint CSIR UGC NET	2021		
			GATE	2023		
		Shrabana Ghosh	JAM			
			GATE BT XL	2023		
			GATE XL	2024		
2	2017-2020	Tamanna Bachhayat	JAM	2019		
			JAM Joint CSIR UGC NET; AIR: 92	2022		
		Sangramjit	JAM	2019		
		Supan	JAM	2019		
			GATE BT XL	2022		
			GATE BT XL	2023		
		Raktim Mukherjee	JAM	2019		
		Wakil Ahmed	WB Police (Constable)	2023		
3	2018-2021	Sayan Biswas	GAT-B	2021		
			GATE	2022		
		RUDRAJIT MANDAL	JAM	2021		
			Joint CSIR UGC NET	2022		
			GATE	2022		
4	2019-2022	-	-			
5	2020-2023	Utsha Das	CUET	2023		
			JAM	2023		
		Dip Mondal	JAM	2023		

29. Student Progression	Student progression			Against % enrolled	
	UG to PG				
SN	Batch	Total no. of Students	No. of Students enrolled in PG	UG to PG (Against % enrolled)	
1	2016-2019	5	5	100.0	
2	2017-2020	19	6	31.6	
3	2018-2021	8	7	87.5	
4	2019-2022	11	4	36.4	
5	2020-2023	19	12	63.2	
PG to M.Phil.			NA	NA	
PG to Ph.D.			NA	NA	
Ph.D. to Post-Doctoral			NA	NA	
Employed			NA	NA	

	<ul style="list-style-type: none"> ·Campusselection ·Other than campus recruitment 		
	Entrepreneurship/Self-employment	NA	NA

30. Detailsof Infrastructuralfacilities:	
a)	<p>Library:</p> <ul style="list-style-type: none"> • The college library has an extensive collection of textbooks, reference materials, scientific journals, and research papers related to biotechnology that serve as a treasure trove of knowledge for students, researchers, and faculty members. • Students can access digital resources, e-books, and online databases to enhance their understanding in this field. • Librarians and staff are available to assist users in locating relevant materials and navigating the vast repository of scientific literature.
b)	<p>InternetfacilitiesforStaff&Students:</p> <ul style="list-style-type: none"> • The department ensures strong internet connectivity for both faculties and students. • High-speed broadband connections facilitate seamless access to online resources, research articles, and collaborative platforms. • Researchers can explore global databases, participate in webinars, and engage with the scientific community worldwide through these internet facilities. • Students benefit from e-learning platforms, virtual classrooms, and online tutorials, enhancing their learning experience.
c)	<p>Classrooms with ICT facility:</p> <ul style="list-style-type: none"> • The department has one classroom, equipped with a projector, and audiovisual aids infrastructure which creates an interactive learning environment for the students. • Faculties utilize multimedia presentations and virtual labs to elucidate complex concepts. • Students actively participate in discussions, group activities etc, creating a vibrant and dynamic academic environment.

<p>d)</p>	<p>Laboratories:</p> <ul style="list-style-type: none"> • The department has two laboratories for UG Honours and Pass students to maintain smooth conduction of practical classes. • Cutting-edge equipment, such as PCR machines, spectrophotometers, and gel electrophoresis units, enables our students in hands-on experimentation. • Students gain practical skills by conducting experiments, analyzing data, and improving their scientific techniques. • Faculty members of other departments of our college and Research scholars of different universities collaborate on innovative projects, pushing the boundaries of biotechnological advancements.
<p>31. Numberofstudentsreceivingfinancialassistancefro mcollege,university, governmentorotheragencies</p>	<p>NA</p>

32. Details on student enrichment programmes (special lectures/workshops/seminar) with external experts:

Sl. No.	Type of Seminar	Academic Year	Topic of Seminar	Coordinators/Conveners	Name of the Speakers	Designation	Topic of the Lectures
1	Online Seminar	2021-22	Intellectual Property Rights Awareness	Dr. Abhishek Basu,	Dr. Ankur Bikash Pradhan	Examiner of Patents & Designs, The Patent Office, Kolkata,	
				Ms. Debjani Mandal	Dr. Sagar Khan	DPIIT, Ministry of Commerce & Industry, Govt. of India	
2	Seminar	2021-22	Blood: Transfusion – Transmitted and Public Health Response	Dr. Abhishek Basu,	Dr. Banalata Adhikari	MBBS, North Bengal Medical College	Blood related disorders
				Ms. Debjani Mandal	Dr. Akash Banerjee	B.M.O.H, Jiaganj Rural Hospital	Infections transmitted through blood and the cases found in Jiaganj Rural Hospital.
3	State Level Webinar	2021-22	Clinical Biotechnology	Ms. Debjani Mandal,	Dr. Sanmitra Ghosh,	Department of Biological Sciences, Adamas University;	Role of Nosocomial Infection in Cancer and other Patients with Immunodeficiency
				Dr. Abhishek Basu,	Dr. Suchandrima Ghosh	I.P.G.M.E & R and S.S.K.M. Hospital	Medical and Pharmaceutical Biotechnology in Advancement of Modern Healthcare System.

4	Seminar	2022-23	Celebrating 200 Years of “Father of Genetics”	Ms. Debjani Mandal	Dr. Abhishek Basu,	Assistant Professor, Department of Molecular Biology and Biotechnology;	Life of Gregor Johann Mendel and his research
					Mr. Debraj Roy	Assistant Professor, Department of Botany	The experimental techniques performed by Mendel during the course of his research.
5	Online Seminar	2020-21	International webinar on ‘Biochemistry and Structural Biology’	Dr. Abhishek Basu	Dr. Subhojit Dutta	Scientist, ICAR-Central Research Institute for Jute and Allied Fibres	Biochemistry and biophysics of genome modification: CRISPR-Cas9 and beyond
					Dr. Rakesh Chatterjee	Scientist, Umea University, Umea, Sweden	Structural aspects of protein X-ray diffraction technique: A basic idea
6	Online Seminar	2020-21	International webinar on Biotechnology	Ms. Debjani Mandal	Dr. Supratim Dey	Associate Research Specialist, University of California (Merced)	Circadian clock of Cyanobacteria

33. Teaching methods adopted to improve student learning

1. Encourage student participation through discussions, problem-solving, and hands-on activities.
2. Frequent Field programs provide an excellent opportunity for students to directly engage with real-world scenarios, collect data, and apply their theoretical knowledge in practical situations.
3. Leverage digital tools such as online platforms, simulations, and virtual labs to enhance accessibility and adaptation to diverse learning styles.
4. Regular assessments of student understanding during the learning process.
5. Utilize diagrams, charts, videos, and other visual aids to enhance comprehension and reinforce concepts.
6. Encourage group work, and team projects to develop communication skills and promote collective knowledge.
7. The department organizes both national and international seminars and workshops, inviting eminent experts as resource persons. These events serve as platforms for students and researchers to gain insights from the global scientific community and inspire them to engage in future research endeavors.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: Participation in science awareness programs in different schools, colleges and social organizations helps a student to be more socially aware and responsible.

1. At the Science Model Exhibition 2019-2020, our department won the **third prize** at the district level. And represented the district at the state level.
2. In the UG-PG Science Quiz Competition for the entire state of West Bengal in 2019-2020, our department appeared as the **winner**.

35. SWOC analysis of the department and Future plans:

Strength:

- The department provides both courses, including Honours and General curriculum. Our comprehensive course structure allows students to explore various aspects of their subject, from fundamental principles to advanced research topics.
- Excellent and elaborate laboratory setup providing almost all the modern apparatus and instruments that the course curriculum demands.
- Provision for around 20 students to practical classes together in the main laboratory. A smart classroom with the requisite audio-visual aids assists the faculty in taking interactive classes.
- Round-the-clock guidance to students by the faculty and non-teaching staff members shapes them up to face the challenges ahead. As a result of that since 2017, our department has been consistently producing the university toppers and rank holders in the semester

	<p>exam of Molecular Biology and Biotechnology.</p> <ul style="list-style-type: none"> • Above all, being the sole department in this field in our district itself is a significant strength. It provides the department as a central point for students of this district interested in this field.
<p>Weakness:</p>	<ul style="list-style-type: none"> • Despite its strengths, the department faces a challenge related to public awareness. This also happens because the college is located in a semi-urban area. Though Molecular Biology and Biotechnology is a rapidly evolving field, but many people may not fully understand its potential applications or the career opportunities it offers. Bridging this gap by actively promoting the department's activities and achievements is essential. • Transportation constraints have influenced educational access and opportunities for students who usually come from adjoining rural areas which directly affect their attendance.
<p>Opportunities:</p>	<ul style="list-style-type: none"> • The faculty members in the department are committed to enhancing student learning and continuously updating their knowledge to stay informed about the latest global developments in the subject. • Theoretical and practical knowledge taught in the department can be correlated with industrial and research sectors. • Esteemed faculty members from reputable institutions who participate in departmental conferences and workshops inspire students to develop a genuine passion for their subject. • Encouraging students to participate in research projects related to molecular biology and biotechnology opens up exciting opportunities for their direct research field. • The department's constant and proactive approach to seizing opportunities will foster the development of future biotechnologists.
<p>Challenges:</p>	<ul style="list-style-type: none"> • Establishing well-equipped research labs for activities such as plant tissue culture and molecular biology experiments. These labs should have modern equipment, safety protocols, and skilled technical staff. Overcoming budget constraints and administrative hurdles to create conducive research environments is a challenge. • Ensuring that faculty members stay updated with the latest advancements in biotechnology is essential. Regular workshops, conferences, and training sessions can enhance their teaching methodologies and research capabilities. Faculty development programs should be a priority.

Future Plan:

1. Teaching & Research plans:

- The department aims to provide a strong foundation in molecular biology and biotechnology to undergraduate students.
- The department plans to actively involve more and more undergraduate students in research projects.
- The goal is to foster a research-oriented mindset among undergraduates.

2. Collaborations and Industry Partnerships:

- The department intends to establish collaborations with industry partners, especially with Rural Biotechnology development organizations like VIB, Nimpith.
- Educational excursion and study tours to Biotechnology based industries will be conducted.

3. Skill Development:

- Workshops, seminars, National & International conferences, and skill-building sessions will be organized.
- Students will be encouraged to participate in national and international conferences.

4. Outreach and Awareness:

- Awareness programs for local school students will be organized by the department focusing on recent scientific developments in the field of biological sciences.
- Science exhibitions and interactive sessions will be promoted by the department to cultivate interest in biotechnology.
- Community engagement will be a priority.
- Awareness campaigns will be conducted by the department regarding arsenic contamination of groundwater (tubewell) and soil in rural areas of Murshidabad District.

5. Infrastructure Enhancement:

- Upgrading laboratories and facilities to accommodate growing student numbers.
 - Investing in modern equipment for research, teaching and providing the required infrastructure for internship and PhD programmes.
- In summary, the Department of Molecular Biology and Biotechnology aims to provide quality education, research opportunities, and practical skills to its undergraduate students and prepare them for successful careers in the field of Molecular Biology and Biotechnology. Our commitment towards excellence will drive progress in both education and research in this field of education at our university.